CLAIMS

1. A communication charge calculation method for calculating the meter-rate charge appropriate to a usage degree of a network for each user, comprising:

a first step for storing a first table having addresses on the network of the users stored therein, and a second table having therein addresses of users of specific communication parties for said each user designated in advance;

a second step for detecting, said addresses of users of the sending source and the sending party of data transmitted via said network at a predetermined communication unit; and

a third step for judging if the communication party is designated as a user of said specific communication party, with respect to each of said users of said sending source and said sending party of said data at said communication unit, on the basis of said first and second tables stored in said first step and the detected results in said second step, and in case said communication party is not the user of said specific communication party, calculating said meter-rate charge with respect to said data in a first charge form, whereas in case said communication party is the user of said specific communication party, calculating said meter-rate charge with respect to said data in a second charge form.

2. A communication charge calculation method for calculating the meter-rate

charge appropriate to a usage degree of a network for each user, comprising:

a first step for storing a first table having addresses on the network of users stored therein, and a second table having therein addresses of users of specific communication parties for said each user designated in advance;

a second step for taking in, from outside, said addresses of each of said users of the sending source and the sending party of data transmitted via said network at a predetermined communication unit; and

a third step for judging if the communication party is designated as a user of said specific communication party, with respect to each of said users of said sending source and said sending party of said data at said communication unit, on the basis of said first and second tables stored in said first step and the addresses of said users taken in in said second step, and in case said communication party is not the user of said specific communication party, calculating said meter-rate charge with respect to said data in a first charge form, whereas in case said communication party is the user of said specific communication party, calculating said meter-rate charge with respect to said data in a second charge form.

3. A communication charge calculation method for calculating the meter-rate charge appropriate to a usage degree of a network for each user, comprising:

a first step for tabulating and storing addresses on said network at said

each user belonging to a group registered in advance;

a second step for detecting said addresses each of said users of the sending source and the sending party of data transmitted via said network at a predetermined unit; and

a third step for judging if said addresses of said sending source and said sending party of said data belong to said one and same group, at said predetermined unit, on the basis of the detected result in said second step and said table, and in case of belonging to said one and the same group, calculating the meter-rate charge with respect to said data in a first charge form, whereas in case of not belonging to said one and the same group, calculating said meter-rate charge with respect to the data in a second charge form.

4. The communication charge calculation method according to claim 3, wherein said first charge form is set for each said group.

5. The communication charge calculation method according to claim 4, wherein in said third step, in case there are a plurality of said groups to which both said addresses of said sending source and said sending party of said data commonly belong, said meter-rate charge is calculated using said first charge form of the highest preferential order of said group in the preset predetermined conditions.

6. A communication charge calculation method for calculating the meter-rate charge appropriate to a usage degree of a network for each user, comprising:

a first step for tabulating and storing addresses on said network for said

each user belonging to a group registered in advance;

a second step for taking in, from outside, said addresses of said users of

the sending source and the sending party of data transmitted via said network at a

predetermined unit; and

a third step for judging if said addresses of said sending source and said

sending party of said data belong to said one and the same group, at said

predetermined unit, on the basis of said addresses of said users of said sending

source and said sending party taken in at said predetermined unit, and said table

stored in said first step, and in case of belonging to said one and the same group,

calculating said meter-rate charge with respect to said data in a first charge form,

whereas in case of not belonging to said one and the same group, calculating said

meter-rate charge with respect to said data in a second charge form.

7. A communication charge calculation apparatus for calculating, when a user

carries out communication with a communication party via a network, the charge

appropriate to the communication carried out by said user, comprising:

detection means for detecting an IP address of a communication party by

analysing flow information of communication carried out by said user; and

calculation means for calculating the communication charge appropriate to

communication carried out by said user in the discount charge form which

discounts the standard charge form in case the IP address of the communication party is an IP address registered in advance by said user.

8. The communication charge calculation apparatus according to claim 7, wherein said calculation means calculate the communication charge appropriate to the communication carried out by said user in the standard charge form, in case the IP address of said communication party is not an IP address registered in advance by said user.

9. The communication charge calculation apparatus according to claim 7, wherein said detection means obtain all flow information produced on the basis of all communications carried out by said user within a predetermined period, and

said calculation means calculate the communication charge at said each flow information.

10. The communication charge calculation apparatus according to claim 7, wherein said user and said communication party are always connected to an IP network provided by an internet provider, and proper IP addresses are assigned to said user and said communication party, respectively.

11. The communication charge calculation apparatus according to claim 10, wherein the communication between said user and said communication party is the communication carried out via said IP network and an edge router connected to said IP network, in case the communication is carried out between said user

and said communication party, flow information indicative of said communication

is stored in storage means on said edge router side, and

said detection means read said flow information from said edge router

when the communication charge of said user is calculated.

12. The communication charge calculation apparatus according to claim 8,

wherein said calculation means perform processing for calculating said

communication charge at each plurality of flows appropriated to a plurality of

communications carried out by said users,

by summing up the communication charges calculated from flow

information for which communication charges are calculated in said discount

charge form out of said plurality of flow information, the meter-rate charge

information indicative of the charge which summed up all communication charges

with respect to the communication subjected to discounting out of said plurality

of communications is produced, and

by summing up the communication charges calculated from flow

information for which communication charges are calculated in said standard

charge form out of said plurality of flow information, the standard charge

information indicative of the charge which summed up all communication charges

with respect to the communication subjected to discounting out of said plurality

of communications is produced.

13. The communication charge calculation apparatus according to claim 7,

further comprising:

billing means for carrying out a billing process on said user on the basis of

said meter-rate charge information and said standard charge information

calculated by said calculation means, and

wherein said billing means reflect said meter-rate charge information and

said standard charge information on a detailed statement of communication usage

provided to said user.

14. The communication charge calculation apparatus according to claim 7,

further comprising:

billing means for carrying out a billing process on said user on the basis of

said communication charge calculated by said calculation means.

15. The communication charge calculation apparatus according to claim 14,

wherein said billing means produce a detailed statement of usage charge which

describes the charge to be billed on said user on the basis of said communication

charge calculated by said calculation means.

16. The communication charge calculation apparatus according to claim 15,

wherein said billing means comprise means for classifying charge demand items

described in said detailed statement of charges by a hierarchical construction and

preparing a classification table which defined an output level indicative of

classification of said charge demand items in connection with said hierarchical

construction, means for producing a charge data base which defines charges of

said charge demand items, and means for producing said charge-details

information on the basis of said output level designated in advance by said user,

referring to said classification table and said charge data base.

17. A communication charge calculation apparatus for calculating, when a user

carries out communication with a communication party via a network, the charge

appropriate to the communication carried out by said user, comprising:

detection means for detecting an IP address of a communication party by

analysing flow information of communication carried out by said user; and

calculation means for calculating communication charges carried out by said user,

using the discount charge form different from the standard communication charge,

in case said communication party is a communication party registered in a group

of said users.

18. The communication charge calculation apparatus according to claim 17,

wherein in case there are a plurality of groups to which said user and said

communication party belong, the discount charge form different at said each

group is set, and

said calculation means calculate said communication charge using the

charge form of the highest preferential order of group out of said plurality of

groups.

19. A communication charge calculation method for calculating, when a user

carries out communication with a communication party via a network, the charge

appropriate to the communication carried out by said user, comprising:

a detection step for detecting an IP address of a communication party by

analysing flow information of communication carried out by said user; and

a calculation step for controlling the charge form of communication charge

with respect to communication carried out by said user appropriate to an IP

address of said communication party.

20. A communication charge calculation method for calculating, when a user

carries out communication with a communication party via a network, the charge

appropriate to the communication carried out by said user, comprising:

a detection step for detecting an IP address of a communication party by

analysing flow information of communication carried out by said user; and

a calculation step for controlling the discount rate of the communication

charge with respect to communication carried out by said user appropriately to an

IP address of said communication party.

21. A communication charge billing method for billing the charge appropriate to

communication carried out by a user on said user when said user carries out

communication with a communication party via a network, the method

comprising:

a detection step for detecting an IP address of a communication party by analysing flow information of communication carried out by said user;

a calculation step for calculating the communication charge carried out by said user by employing a meter-rate charge calculation method different from the standard charge, appropriately to the IP address of said communication party; and

a billing step for billing the communication charge calculated by said calculation step on said user.

22. A communication charge calculation method for calculating, when a user carries out communication with a communication party via a network, the charge appropriate to the communication carried out by said user, comprising:

a detection step for detecting an IP address of a communication party by analysing flow information of communication carried out by said user; and

a calculation step for controlling the discount rate of the communication charge with respect to the communication carried out by said user, in case the IP address of said communication party is an IP address registered in advance by said user.

23. A communication charge calculation method for calculating, when a user carries out communication with a communication party via a network, the charge

appropriate to the communication carried out by said user, comprising:

a detection step for detecting an IP address of a communication party by analysing flow information of communication carried out by said user; and

a calculation step for calculating the communication charge of said user, employing the meter-rate charge calculation method different from the standard communication charge, in case the IP address of said communication party is an IP address registered in advance by said user.

24. A communication charge billing method for billing the charge appropriate to communication carried out by a user on said user when said user carries out communication with a communication party via a network, the method comprising:

a detection step for detecting an IP address of a communication party by analysing flow information of communication carried out by said user;

a calculation step for calculating the communication charge carried out by said user employing the meter-rate charge calculation method in which the communication charge applied is different from the standard charge, in case said communication party is determined to be a communication party registered in advance by said user, referring to said detected IP address, whereas calculating the communication charge carried out by said user employing the charge calculation method appropriate to said standard charge, in case said

communication party is determined not to be a communication party registered in advance by said user, referring to said detected IP address; and

a billing step for billing the communication charge calculated by said calculation step on said user.

25. A communication charge calculation method for calculating, when a user carries out communication with a communication party via a network, the charge appropriate to the communication carried out by said user, comprising:

a detection step for detecting an IP address of a communication party by analysing flow information of communication carried out by said user; and

a calculation step for controlling the discount rate of the communication charge with respect to the communication carried out by said user, in case the IP address of said communication party is included in a group in which the IP address of said user is registered, in case the IP address of said communication party is an IP address registered in advance by said user.

26. A communication charge billing method for billing the charge appropriate to communication carried out by a user on said user when said user carries out communication with a communication party via a network, the method comprising:

a detection step for detecting an IP address of a communication party by analysing flow information of communication carried out by said user;

a calculation step for calculating the communication charge carried out by said user using the discount charge form different from the standard charge, in case said communication party is a communication party registered in a group of said user, referring to said detected IP address, whereas calculating the communication charge carried out by said user using the charge form as same as said standard charge, in case said communication party is a communication party not registered in group of said user, referring to said detected IP address; and

a billing step for billing the communication charge calculated by said calculation step on said user.

27. A communication charge calculation method for calculating, when a user carries out communication with a communication party via a network, the charge appropriate to the communication carried out by said user, comprising:

a detection step for detecting an IP address of a communication party by analysing flow information of communication carried out by said user; and

a calculation step for calculating the communication charge carried out by said user, using a first discount charge form and a second discount charge form different from the standard communication charge, in case said communication party is a communication party registered in advance by said user and said communication party is a communication party registered in a group of said user.

28. A communication charge billing method for billing the charge appropriate to

communication carried out by a user on said user when said user carries out communication with a communication party via a network, the method comprising:

a detection step for detecting an IP address of a communication party by analysing flow information of communication carried out by said user; and

a calculation step for calculating the communication charge carried out by said user, using a first discount charge form and a second discount charge form different from the standard charge, in case said communication party is determined to be a communication party registered in advance by said user, and said communication party is a communication party registered in a group of said user, referring to said detected IP address,

whereas calculating the communication charge carried out by said user using the charge form as same as said standard charge, in case said communication party is determined not to be a communication party registered in advance by said user, and said communication party is not a communication party registered in a group of said user, referring to said detected IP address.